DOCUMENT RESUME

ED 393 991 CE 071 286

AUTHOR Foster, Patrick N.
TITLE A Century of Technology Education.
PUB DATE May 96
NOTE 31p.; Paper presented at the Spring Conference of the Connecticut Technology Education Association (63rd, Waterbury, CT, May 20-21, 1996).
PUB TYPE Information Analyses (070) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Educational History; Educational Legislation; Educational Trends; Elementary Secondary Education; *Industrial Arts; *Industrial Education; Public Education; *Technology Education; Vocational Education

ABSTRACT

The history of technology and industrial education in the United States provides lessons that should be heeded if current advances such as tech prep are to succeed. Practical, vocation-oriented education has been an urgent objective for U.S. education three times in the 20th century. At the turn of the century, manual training (later manual arts) was advocated, but despite the impetus of the Vocational Education Act of 1917, this trend subsided. The progressive education movement of the 1920s-1930s gave rise to industrial arts, which was not an outgrowth of but a reaction against manual training. The industrial arts movement was involved in the debate between the social-efficiency and student-centered rationales for public education. Although the post-World War II years were the strongest for industrial arts, the movement remained conservative when more liberal educational trends arose in the 1960s-1970s. Neither vocational education nor industrial arts embraced the 70s career education concept. During the back-to-basics educational reform era of the 1980s, industrial arts changed its name to technology education and attempted to establish itself as a basic. At the end of the century, practical educators once again have the opportunity to reach all public school students. The internal divisions and indecision that characterized past responses must be overcome if this present opportunity is to be seized. (Contains 63 references.) (SK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 393 991

A CENTURY OF TECHNOLOGY EDUCATION

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

P N Foster

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Presented at

the 63rd Spring Conference of the

CONNECTICUT TECHNOLOGY EDUCATION ASSOCIATION

May 20–21, 1996

Naugatuck Valley Community Technical College Waterbury, CT

Patrick N. Foster
graduate instructor, Practical Arts and Vocational–Technical Education
The University of Missouri–Columbia
105 London Hall, Columbia, MO 65211

patrick@coe.missouri.edu

CE071286

BEST COPY AVAILABLE

A Century of Technology Education

> Squirrels don't know history and squirrels, if asked, would probably say that, on the whole, they had fine lives. But—observe squirrels closely. Twitch! Jump! Scurry! Squirrels live in a world of random potential disasters. Squirrels are constantly in a state of panic. Everything comes as a surprise to a squirrel. The reason is that squirrels do not know history. They live in the present, they live in a small world. When they dash for the nearest tree when there is a clap of thunder they do not know that their hysteria is unnecessary because in the entire history of squirrels, not one squirrel has ever been injured by thunder. I'm glad I'm not a squirrel (Dudley, 1994, p. 11).

Background

The purpose of this paper is to explore the ways in which a knowledge of history can inform practice in education. The specific area of education under consideration is industrial and technology education in the United States, which is viewed herein in the larger context of vocational education. In turn, vocational education is viewed in the context of education in the US.

The burden of demonstrating the significance of a historical perspective is, as usual, placed on the author. In this case, the significance of history in a practical form of education is under consideration. Thus the burden is increased: historians assume an inherent value in history, a value in that which may not have immediate application in practice. Similarly, there are areas of education in which the practicality of the topic under study is of little concern. By its nature, vocational education is not one of these areas. Not surprisingly, its concern is more with the future than with the past.

The histories of vocational and industrial education, along with the larger history of education in the US, will be considered here simultaneously. In focusing chronologically on the past century of American education, this study will suggest that the current state of American practical and vocational education, given the popularity of school-to-work legislation and programs, tech prep, applied academics, and the like is not unique, and that if history is

any indication, these advances will be lost in the coming decades unless vocational educators do not repeat past mistakes.

The need for historical study in technology education. It may be true that history never really repeats itself. But it is equally true that there are really never any novel situations. History cannot reliably render educators services of prognostication or perscription. It can, however, provide a record of probable causes and effects. It can demonstrate how people and movements acted and reacted to circumstances in the past, and identify the consequenses of those actions. Unfortunately, the profession of industrial education in the US has not kept such a record.

Since the last book-length history of technology education or industrial arts was published (Barella & Wright, 1981), much of the field has changed its name, and several avenues of historical research have been pursued, the results of which conflict significantly with prior and accepted histories. Additionally, the Barella and Wright book was sanctioned by a council of the American Industrial Arts Association (AIAA), and as such intentionally provided a general-education perspective.

Snyder's (1992) dissertation sought to provide a history of the field which reflected the period following the publication of the Barella and Wright work. Although the dissertation covers nearly a million years—the history begins early in the stone age—a majority takes place during the last 30 years. The focus of the study was on the "transition" to technology education in 1985, and as such was also concerned primarily with the general-education perspective.

In histories of technology education, the field is often considered to have evolved from manual training and manual arts. Brown (1977) and

others dispute this. Part of this present difficulty may lie in overuse of the term "industrial arts" during the 1920s and 1930s. During and since that time, Warner, founder of the AIAA, is considered to have advanced the original ideals of the field, as proposed by Frederick Bonser and Lois Mossman (see, e.g. Towers, Lux & Ray, 1966). Petrina and Volk (1995; in press) have amassed much evidence to suggest that Warner in fact ignored the essential components of the Bonser and Mossman conception. What this says of post-Warner general-education industrial arts and technology education and its supposed conviction to Bosner and Mossman (e.g. Volk, 1993b) demands more study.

Meanwhile, Warner had adversaries who viewed industrial arts as vocational, or at least partly so. That Warner had detractors is well known; yet the legacy of the reaction to Warner has often been overlooked. Warner's adversaries did not disappear. The successes of the American Vocational Association's Technology Education Division and the National Association of Industrial and Technical Teacher Educators may indicate that significant theoretical development in technology education has been based on a conception of industrial arts that differed from that of the AIAA.

Ironically, the very basis upon which the philosphy of the AIAA was built was a book which advocated vocational industrial education for secondary students.

It seems clear, then, that much work needs to be done in the history of general industrial education in the US. Without understanding the history of its ideals, the field is at a disadvantage when trying to apply its model of technology education to present and future problems (see, e.g. Zuga, 1994; Lewis, 1994).

This paper will not be a comprehensive history of technology education in the US. Rather, it will represent an attempt to demonstrate the value of historical research to the field.

American Education in the Twentieth Century

History has demonstrated twice that practical, vocation- or career-oriented education can be recognized as an important and urgent objective for twentieth-century American education. Now, at the close of the century, educators are, for a third time in a hundred years, hearing internal and external calls for schools to be accountable for the future vocations of their students.

The first time this trend manifested itself—as the popularity of manual training gave rise to federally-funded vocational education in the early years of this century—there was no tightly knit community of vocational educators.[1] This time, however, there is a large, organized community of vocational educators, and there is a sense in the profession that its "time has come." Finally, it seems, education in general has recognized the value in vocational education.

Manual training. As technically incorrect as it seems, the history of twentieth-century education in the US may be said to have begun in 1876. This is, of course, the date of the Philadelphia Centennial Exposition, arguably one of the most important dates in the history of vocational and industrial education (see Barlow, 1967). It was important in the history of American

[1]There were several vocational teachers' organizations in existence at the time. The National Society for Vocational Education, for instance, was founded in 1906; the Vocational Association of the Middle West was formed in 1914. But it was not until 1926 when the two groups (and others) merged to become the American Vocational Association that a true national vocational teachers' association existed in the US.

education as well (Button & Provenzo, 1989). As legend has it, Calvin Woodward, the "father of manual training" (Miller & Smalley, 1963, p. 20), influenced by a Russian tool-instruction exhibit he saw at the exposition, returned to Missouri, where he soon established the famous St. Louis Manual Training School (see Coates, 1923). Apparently the story of Woodward's viewing the Russian exhibit is completely fictional (see Barlow, 1967), but as Hirsch (1987) pointed out, so are many stories about George Washington and Abraham Lincoln—and those stories have served American education well.

Although some of its advocates regarded manual training as a comprehensive subject (see Zuga (1980) for a discussion of the Woodward case specifically), in practice its threefold purpose, at least in the late nineteenth century, was to keep boys in school, "provide vocational skills," and "develop leisure-time interests" (Gerbracht and Babcock, 1969, p. 8). Later, instruction in the basic principles of the processes and materials of industry was added to this list.

As a term, *manual training* "has seemed to mean all good things to certain educational reformers and much evil to others. It has always been subject to a new direction and, like the tariff, always a live subject for discussion when all others, except the weather had been exhausted" (Bennett, 1934, p. 235). In fact, shortly after the turn of the century, manual training and supervision were the top professional issues in all of education (Wright, 1981).

It seems unlikely that any two manual training programs operated by different teachers were very similar. Felix Adler's Workingman's School, founded in 1897, is often cited as having possessed an exemplary curriculum (Gerbracht & Babcock, 1969; Snyder, 1992; etc.). The components thereof were tools, machines, and processes. Students were expected to learn the correct use

of each of these, as well as to gain an understanding of the need for tasks to be done with them. Eventually, Adler began to integrate other subject areas. "He felt, for example, that aesthetic values and mathematical and physical principles would be better taught by working with material things." (Gerbracht & Babcock, 1969, p. 9). Adler, who specifically assumed that manual training was to be a part of general education, is considered to have been an influence on Woodward (Bennett, 1934). It seems clear that Woodward's program, although heavily influenced by the abstract version of the "Russian system" of manual training was presented in 1876 (Bawden, 1950; cf. Barlow, 1967), eventually evolved beyond tool instruction, into a more cultural study (Bennett, 1934). In fact, descriptions make many of the exemplary manual-training programs sound as if they were intended as general education.

Manual arts. Whichever term modern educators would apply to the curricula of Adler and Woodward, it seems likely that many manual training teachers did not view the subject as particularly cultural; and, to be certain, the term *manual training* eventually was replaced by *manual arts*. Manual arts has been viewed as a general-education form of manual training. "The term [*manual arts*]," wrote Smith (1981), "is very difficult to isolate and attach to a specific program...it came to represent a revised form of manual training" (p. 185).

Bennett (1907) regarded this straightforwardly: "drawing and manual training have...been growing nearer and nearer together, and in their best development they have now become so unified that they are properly designated by the single term Manual Arts" (p. 189).

Whereas manual training was not consistently presented as a general-education subject, manual arts was almost always so. University of Missouri industrial education chairman Ira Griffith (1916) provided this rationale for general industrial education:

> Technical manual arts, like any other subject given for general educational purposes, will justify itself in proportion as it can show (1) Similarity of subject matter considered in school to that which the individual will meet in life after leaving school; (2) similarity of method of procedure; (3) the giving of ability to pupils to generalize their specific experiences and see them in the light of "larger principles" (Griffith, 1916, p. 5).

The preceeding treatment of manual training and manual arts was intended more to describe the atmosphere in of manual and industrial education in the early twentieth century than to describe the lineage of present-day technology education. In fact, technology education, founded as *industrial arts*, may be regarded as a reaction to the prevailing conception manual subjects—not a descendant thereof. In practice, that prevailing conception only very slowly gravitated toward the ideals of industrial arts; in theory, however, it has advocated them wholeheartedly. As noted above, the industrial arts movement was surely not the first attempt at social or cultural education. Yet "unquestionably industrial arts never has been part of the manual training tradition" (Brown, 1977, p. 3).

In other words, industrial arts (now technology education) does not enjoy a comfortable relationship with vocational industrial education, although many argue that this need not be so (Hutton, 1992; Nee, 1993). Early in its existence, the field, especially through the American Industrial Arts Association, aligned itself with the National Education Association, and arguably, in some cases, against the American Vocational Association. History suggests that by staunchly remaining nonvocational, much of the profession

has been unable to benefit during periods of popularity for vocational education.

The Vocational Education Act of 1917. In 1907, Bennett contrasted a growing "industrial education" movement in the schools, which was "cultural by virtue of being highly vocational," with manual arts, which he defined as "work that is cultural first and then vocational" (p. 190). He recommended that the manual arts profession, which he regarded as differing only in emphasis from vocational industrial education, make specific and deliberate adjustments so as to meet more vocational demands (p. 193-195).

Bennett's article was published while influential leaders in industrial education, such as Richards and Prosser, were helping draft federal legislation to recognize and fund vocational education. In 1917 Woodrow Wilson signed the Smith-Hughes Act, which initially provided $1.86 million in funding for vocational programs in public schools. As Snyder (1992) noted,

> There were now two similar, yet distinctly different, forms of industrial education provided for by the American public educational system. Traditional general education programs, whether they were called manual training or industrial arts, were now in company with the new vocational education program (p. 96).

Prior to 1917, "federal educational aid to states...had been given either for general education on the normal public school level (elementary and high schools through grants of land) or for special types of higher education, largely through the land-grant colleges" (Allen, 1950, p. 72). Before the enactment of the Vocational Education Act, many states had established vocational education systems. Not surprisingly, after 1917, "every State in the Union made some provision for the use of federal funds to stimulate local communities in this work" (Prosser, 1930, p. 12).

But some citizens, including educators and legislators, felt that vocational training had no place in publicly funded education. As Butts (1955) recounted,

> Practical-minded persons argued that education was derelict in its duty if it did not give students a practical training for some job in life and for earning a living. Others were equally convinced that the distinctive task of schools and colleges was to give students a well-rounded liberal education that would fit them to lead a full and worthwhile life, leaving specialized training to other agencies" (p. 570).

The Vocational Education Act was enacted during the development of a new conception of industrial arts at Columbia University's Teachers College. Teachers College faculty members Bonser and Mossman (1923) were still using the term "manual training" to identify the prevailing interpretation of industrial education in the 1920s. In *Industrial Arts for Elementary Schools* they listed the components of manual training to which they objected:

> Investigation of the courses proposed and taught in our schools leads one to note these prominent inadequacies in manual training:
>
> Want of relationship of the work to life. The sequence of the models was in terms of tool processes.
>
> Failure to provide for the individuality of the child. Each must conform to the system.
>
> Lack of motivation. The work was all prescribed in a fixed course.
>
> Placing the emphasis upon the product as the objective, rather than upon the growth of the child (p. 479).

Bonser and Mossman, along with Teachers College Dean Russell, and many others never considered in the histories of industrial arts, developed a comprehensive system of industrial education which, although never implemented on a large scale, has been the theoretical basis for technology education for most of the past seventy years.

To this day, many of the philosphical problems in industrial arts (now technology education) stem from disagreement within the field as to whether

technology education is general or vocational. One side of the debate has historically been represented by William E. Warner's American Industrial Arts Association. The AIAA (now the ITEA) has always been nonvocational. As previously mentioned, the Technology Education Division of the American Vocational Association is one of about four smaller groups representing the vocational conception of technology education.

Generally speaking, these organizations all recognize Bonser and Mossman as having provided significant philosophical direction for the field. So did Bonser and Mossman advocate general of vocational industrial education? Although it is rarely recalled today, they advocated both, reserving general industrial arts for the elementary grades (see Bonser & Mossman, 1923).

But by the time their work was being widely published, interest in manual training was giving way to a new educational trend, progressive education.

Progressive education. Although federal funding for vocational education continued after 1917, manual training was only a trend, and, like all trends, it subsided. As evinced by a joint report issued in the late 1930s by the National Education Association and the American Association of School Administrators, vocational education remained a concern between the World Wars (Educational Policies Commission, 1938; see esp. p. 12), but it was not able to maintain its prior stature in American education. Its proponents may have assumed that it had earned a permanent place in education, and they seem to have labored to internally optimize it, instead of working to keep it in the forefront.

But the "progressive movement" became the next trend in education. The Progressive Education Association was founded in 1918, and for the next "15 or 20 years...the dominant interest (in American education) was to release the individual capacities of children in the "child-centered" school. (Butts, 1955, p. 571). "'Learning by doing,'" Butts went on to say, "became the watchword" (p. 574).

As may be clear from the quote from Bonser and Mossman (1923) on page nine, out of the progressive movement came industrial arts. Even without the benefit of much hindsight, educational historians of the 1920s declared industrial arts—social industrial education—to be an old idea, one which had been popular in Europe in the sixteenth, seventeen, and eighteenth centuries (see Anderson, 1926). In other words, it has been a recurring trend in Western education for hundreds of years—and clearly, a trend which never took hold. It bears repetition that, despite what many of its historians have suggested, industrial arts was not an outgrowth of manual training, which at the time was at the height of its popularity. Quite to the contrary, it was a reaction *against* manual training. As such it provides a microcosm of the interation between the two major rationales for public education in the first quarter of the twentieth century—the social-efficiency and student-centered theories.

Although many proponents of vocational education today and in the past favored education for and about work on the basis of the good it would do for individual students, the initial success of vocational education in securing federal funding was largely due to the benefits it promised society and business. Generally speaking, it provided industry with better-trained workers. This "social efficiency" rationale for vocational education was hotly debated in the years preceeding the passage of the Vocational Education Act in

1917 (see McPherson, 1978). Since that time the debate has focused on whether the social-efficiency argument was advocated by the field's leaders.

In fact, even during its height of popularity, progressive education was criticized by classical educators. When Van Doren (1943), for example, noted that "progressive education... ignores two things: the deep resemblances between human beings, calling for a fixed program of learning which no child may evade, and the importance of the human past" (p. 92), he was calling attention to the fact that many progressives opposed "fixed" methods of the traditional curriculum.

During this time, while industrial education remained popular both as general industrial arts and vocational industrial education, progressive education was being questioned by many in industry and business. Brameld's (1950) comments came during a time when progressive education had faded from popularity:

> ...there are sharp objections to (educational) progressivism from groups in the culture who do not wish to see the schools become instruments of social inquiry and liberal action. ... Perhaps the single most vocal, most persistent spokesman has been the National Association of Manufacturers. In the past quarter-century or more it has spent many millions of dollars propagandizing *for* a system of education designed to strengthen the economic-political *status quo*, and *against* any type of education that might help students to question its righteousness and supremacy (p. 178).

"The spokesmen for educational tradition and for classical learning," Bramfeld (1950) went on to note, "against whom Dewey and his lieutenants took the offensive in the earlier years of our century, have themselves begun a counteroffensive" (p. 178). In hindsight it seems clear that by the time Bramfeld wrote these words, progressive education had fallen out of favor in American education. It must have been clear that the Cold War, the launch of *Sputnik II* in 1957, the red scare, and the like had contributed to a political

climate in which progressive education was unlikely to prosper. Still, as Lawrence Cremin, eminent historian of education, put it in 1961,

> Somehow, a movement that for a half century, enlisted the enthusiasms, the loyalty, the imagination, and the energy of a large segment of the American public and the teaching profession became, in the decade following World War II, anathema, imortalized only in jokes. (p. vii).

By the 1950s, even the Soviet Union's official media outlets had "increasingly and sometimes insultingly opposed Dewey's views and the kind of education for which he (stood)" (Brameld, 1950, p. 179). Progressivism in education was dead—at least for a while.

The post-World-War II years. Although it has not always presented as such, progressive education may be viewed as a reaction to the social-efficiency function of schools. Progressives emphasized (some would say overemphasized) treating each student as an individual. Few educational traditions went unchallenged, although most eventually went unchanged. Politically, progressive education, popular between the two World Wars, could not have come at a more opportune time. Not surprisingly, it began to fade during the depression, and was all but completely gone by the McCarthy era. As politically right-of-center as the goals of social efficiency had been, so had progressive education been left-of-center. Now the tide had turned.

The post-World-War II era may have been the strongest for industrial arts. This may seem odd in light of the earlier portrayal of industrial arts as having been the product of progressive education. Certainly the 1950s were not a time for progressive education. But industrial arts, in practice, had never really been progressive (Volk, 1995). The superficially similar manual training, popular in schools in the 1910s and 1920s, exerted sufficent gravity

on the new field of industrial arts that little more than the latter's name remained (see Petrina & Volk, in press, for further discussion of this). By the 1950s, industrial arts was in a dubious position.

The "essentialist" trend in American education after World War II (Button & Provenzo, 1989) was decidedly conservative. It was not the first popularity of a "back-to-basics" movement, nor the last. But it was the first time educators themselves were so specifically held accountable—and criticized—for the condition of education. *Why Johnny Can't Read* was a bestseller. Schools and teachers, it was argued, were not instilling patriotism in students. It was felt that the prevailing philosophy of education was out of line with societal sensibilities. These criticisms, it should be noted, originated within education—as had the movements in favor of manual training and progessive education.

The industrial arts of the 1950s was probably rarely accused of being unpatriotic or otherwise philosophically unacceptable. In fact, insofar as it promoted American industry and self-efficiency, it fit the political landscape well. Despite this, it was not a "basic" in the curriculum, and by the time the original legislative reaction to *Sputnik*, the National Defense Education Act, was signed, industrial arts was not viewed as playing a vital part in preserving the American way of life. Enrollments began to wane.

Unfortunately for these already-decreasing enrollments, industrial arts remained conservative when more liberal trends in education (see Button & Provenzo, 1989) came to the fore in the 1960s and 1970s. Historically, the 1950s were the "heyday" of general industrial arts. It was nonvocational, conservative, and had not convinced educators of its importance as a component of general education—in a conservative atmoshpere in which

non-general coursework was tolerated and vocational education was not sufficiently popular to overshadow industrial arts.

American education during the 1960s and 1970s. Once again in the 1960s and 70s, public schools were under proverbial attack. This time, the criticism was from the left.

> ...our public schools, as mirrors of our society, have played a significant role in creating the conditions that have led to the waste of talent and ability and to the subsequent loss of dignity and self-worth on the part of millions of our citizens. (Hickerson, 1966, p. i).

The roots of the movements of this time period, including competency-based education, open-access schooling, child-centered activities, career education, and the like, may well have been in the progressive era; to be sure, some of these movements are popular in the mid-1990s. Goodlad (1979), for example, discussed how, in the spring of 1968, two events unrelated to education inspired Goodlad to ponder the question for which he is known: what are schools for? The events were Lyndon Johnson's announcement that he would not seek reelection as president, and Martin Luther King's assassination. Johnson had pointed out that education is "at the heart of all our problems" (Goodlad, 1979, p. 1).

> Much of what schools are expected to contribute to society does not appear in lists of educational goals. Such has been the case with the aspirations expressed by both Lyndon B. Johnson and Martin Luther King. (Goodlad, 1979, p. 3).

As industrial arts and federally-funded vocational education were both approaching their fiftieth anniversaries, a number of more specific and internal concerns were coming to the fore.

At the close of the 1950s, the industrial arts profession was reacting strongly to the recommendations educational pundits were making after the launch of *Sputnik II*. Knight, for example, wrote that "industrial arts shops may become excellent laboratories where...the practical applications of scientific principles can give depth to understandings" (1958, p. 18). Paton (1958) agreeed, calling for more training in the sciences and mathematics for industrial arts teachers. Those teachers, Maley wrote, "must accept the basic fact that mathematics and science (can benefit from) a truly significant contribution by industrial arts" (1959, p. 12). Spencer (1959), meanwhile, extolled the virtues of capitalism in the industrial arts laboratory. The rhetoric seems to have paid off in the form of the inclusion of industrial arts under Title III of the National Defense Act, as ammended in 1966 (see Decker, 1966).

Many of today's critical issues in technology education identified recently by Wicklein (1993) were issues in industrial arts during the 1960s. The conflict between the general and vocational purposes of technology education, for example, is a recognized problem in the mid-1990s. It was no less a conflict in the mid-1960s (see, e.g., Bell, 1964). An excellent testimony to this is Powell's (1966) article *A Boat Needs Two Oars*.

Powell, a high-school teacher from Colorado, was serving as the AIAA's vice-president for classroom teachers. In the article he described a fishing trip he took with a lawyer and a doctor. The lawyer mentioned that he was a member both of the American Bar Association and a more specialized national organization of patent lawyers. The doctor, in turn, described his membership in a national organization for internal medicine—his specialty—as well as the American Medical Association. From this, Powell reasoned that industrial arts teachers should belong to both the AIAA as well

as a more overarching professional organization. But he did not advocate membership in the AVA. The "over-all" professional organization to which industrial arts teachers should belong, Powell said, was the National Education Association.

Another current problem in technology teacher education is a serious shortage of teachers (see Householder, 1992; 1993) which, given its current rate, has been predicted to result in the demise of the profession (Volk, 1993a). By the 1960s, the problem had existed for some time, and although teacher education enrollments were on the rise (Boyd, 1966), the teacher shortage was considered to be one of the top professional issues in industrial arts (Babcock, 1967; Decker, 1967).

Just as it education in general was being criticized for its inadequacies, so was industrial arts. Marshall Schmitt, industrial arts specialist for the US Office of Education, said in 1967 that "the current industrial arts curriculum does not even measure up to the program recommended by the profession ten to 20 years ago" (p. 52-53). "Industrial arts is luck to be alive today," Good (1967) agreed. "Few industries could survive this long with so little improvement" (p. 9).

Hickerson (1966) was writing generally about education when he noted that

> Change, when it comes, will emerge in the form of a serious reconsideration in American society of the role of each individual. ... But in no way does this mean that we in public education must sit back and say, "We can do nothing until all around us changes clearly, irrevocably, and unmistakably" (p. 92),

but he certainly could have been addressing the topic of industrial arts education. Unfortunately there was little change in industrial arts in the 1960s, although elementary industrial arts experienced a resurgence in

popularity (Scobey, 1966; "Industrial Arts for," 1966)—for the first time since the similarly liberal progressive era.

As Barlow (1967) indicated, vocational industrial education was undergoing similar difficulties. Its first group of leaders (c. 1900-1950), some of whom helped elevate the profession to the status it held before and during the progressive era, were gone, and it was uncertain as to wheter a new group would emerge. Additionally, the subject-matter basis of the field was still nebulous. Finally—and perhaps not surprisingly—professionals were questioning how to resolve the conflict between general and vocational conceptions of the subject.

Career education. Another product of the return to more of a progressive education in the US was career education. Sydney Marland, US Commissioner of Education and career education's most notable advocate, said of career education that "in essence we are trying to answer a very large question: what is right and what is wrong with *vocational education* in America today...? (n.d., p. 1, emphasis added). Yet many considered career education to be quite separate from vocational education:

> Since the 1960s, when then U.S. Commissioner of Education Sydney Marland was strongly advocating "career education," the term has often been misused as a fancy term for vocational education. ... Preparation for a single job or vocation cannot be called career education without doing violence to the English language. (Woodring, 1983, p. 11).

For the second time in the century, practicality and vocational orientation not only became popular in education, they became a substantial part of the envisioned solution to many educational and societal woes. Indeed, as Barlow (1973) suggested, "criticism of education in 1912, in relation to the lack

of vocational education, reads much like the criticism of the 1970s, in relation to the lack of career education" (p. 31).

But neither vocational education nor industrial arts wholeheartedly embraced the concept of career education. Some in the general industrial arts field felt that it was a "fact that administrators, curriculum developers, and teachers have expected industrial arts to contribute *too much* to career education programs. This...has actually worked to the detriment of both industrial arts and career education" (Smith, 1982, p. 113). Industrial arts, it was felt, was general education, and as such, had no more to offer career education than any other subject. It must have been difficult for these educators to resist the temptation to take more advantage of the popular career education movement. But they did resisted on principle that it was too vocational.

The the opposite seems to have been true of vocational education. The American Vocational Association appears to have welcomed the trend (e.g., Magisos, 1973), but as always, the question remained as to the base purpose of vocational education—some in the profession felt that its role was to educate for general employment; others were of the opinion that vocational education should prepare youths and adults for employment in a specific trade. From the latter standpoint, career education was laudable, but not part of vocational education. It was too general.

The profession of vocational education is in a surprisingly similar situation today, with the popularity of applied-academics courses. Whereas there appears to be a consensus among vocational educators that school-to-work and similar movements in education at large are at the same time favorable and beneficial to the cause of their field, there is not a consensus that applied academics, for example, should be promoted, for example, by the

American Vocational Association. Again, the difficulty is that applied academics is sensible and beneficial to students, but it is not vocational education. Yet with the demise of general education appearing to only be a few years away, vocational education may too have to change.

However, history suggests that the profession of vocational education, in an effort to maintain internal tranquility, will ultimately—and for better or worse—pass up the opportunity to promote efforts to "bridge the gap" between vocational and general education. Clearly, gains have been made in American education—gains toward recognizing the fact that many students will learn better when allowed to apply theories. If the past is any indication, when the next backlash comes—and it may come as soon as the next presidential election—much of what was gained will be lost.

The back-to the basics movements of the 1980s. If the gains, in a progressive sense, made by American education during the 1960s and 1970s were not completely lost in the following decade, they were at best suspended. It has been repeated many times that the catylist for educational change in the 1980s was the publication of many status reports on American education (e.g. Boyer, 1983) which, taken together, demonstrated that education was failing to do its job properly. Despite the wide publicity of the reports, it seems that other factors may have resulted in external calls for change in education.

Certainly the political climate had changed in the 1980s. A popular conservative served at president, followed by his vice-president; foreign dictators seemed to be continually challenging the US, only to be defeated—the Ayatolla Kohmeni, Manuel Noregia, Colonel Khadafy, Saddam Hussein, and the like—and fiscal conservatism was in favor. When it became clear that American children were scoring below children in other countries on

standardized tests while teachers' salaries were increasing, education began to be questioned.

Vocational education was not immune to this new scrutiny. Although, as Woodring (1983) suggested, "it is generally agreed by parents, school board members, legislators, and employers that some part of the preparation—for those who are not going on to higher institutions of learning—is a responsibility of the public schools," he wrote that it was equally true that

> the European practice of sorting out children at an early age and providing liberal education only for those who are bound for the universities, while shunting others directly into trade schools, is contrary to the American tradition and inappropriate in a nation that can afford to provide 12 years of schooling for all plus higher education for many (p. 9).

Popular education writers, like Bloom (1987) and Hirsch (1987) saw the opportunity to advance the idea that the education of the past could, with some modification, be the answer to the educational woes of the 1980s, although they, along with many others, suggested that society would have to begin the trend which education would follow—not, as Dewey or other progressives would suggest, the other way around. This echoed President Reagan's suggestion that the values of the past, brought into the 1980s, might be the answer to societal woes.

Again it was a time of educational conservativism, but industrial arts, conservative as it was, was unable to take advantage of the situation. The conservative question in the 1980s was not whether any given component of education was liberal or conservative, but whether it was a *basic*. And despite the efforts of the newly rechristened International Technology Education Association to establish the field as a basic, technology education was not a basic. The 1980s were not a good time for technology education, or, for that

matter, many similar fields. Since then, the field has been stagnant at best (Volk, 1993a; Waetjen, 1992).

Closing Thoughts

> History can do at least two things: It can show what historical ingredients have gone into our present beliefs and practices and what problems face us when inherited traditions confront new conditions and new demands; and it can show how other peoples in other times have solved similar (though not identical) problems. (Butts, 1955, p. vii).

Is the present—the mid-1990s—an "essentialist" or "progressive" era in American education? The back-to-the-basics movement of the 1980s appears to be over, but the conditions under which it flourished have remained essentially the same—the last conservative phase in education arguably lasted about twenty years. The ills reported in the last decade have not been corrected, or, in many cases addressed. Yet many signs of progressivism are evident—career education may have disappeared more than a decade ago, but "career paths" (a different concept with similar goals) are becoming popular. "Individualizing instruction" a popular phrase of the 1970s, is not terribly different in intent than "constructivism" (although it differs substantially in orientation). Inserestingly, some of the educational reports which appeared later in the 1980s, and which bemoaned the condition of American education as much as those released in 1983 and 1984, may account for the popularity of at least some of these educational movements. The sense remains that for the US to remain globally competitive, employees need better—and, to some degree, different—"basic" skills. Thus, the reasoning goes, education needs to change.

And this is where vocational education appears to come in. It should be noted that these educational pundits were not making recommendations

for vocational education, but for education as a whole—the important suggestion was not that vocational education had to change. Yet if it is to contribute to a new, improved conception of American education, perhaps it must.

Technology education, meanwhile, will have to change as well. This is especially true if it is truly a general-education field. In a time when the concept of an educational "discipline" is felt to be outmoded, considerable effort is being expended in the field to establish itself as an "academic discipline" (e.g. Waetjen, 1992, p. 25). It seems clear that segregated-subject general education will not be the model of American education in the future. Like any educational institution, technology education will survive for some time even if it is no longer needed; but given the recent emphasis placed on applied academics, coupled with the erosion of separate disciplines, technology education, with its "hands-on" nature, is in a unique position to contribute to the education of many students. Yet if the past is an indication of the future, the profession will not concede the discipline issue, and will insist that it delivers content important to each child which is not deliverable by any other subject in the school—and in so doing will continue to reach a decreasing minority of students.

Conclusion. As previously mentioned, practical educators, be they vocational or general, once again have the opportunity to reach all students in the public school. In the past, vocational and technology education have responded to these opportunities with indecision. It seems that each time, internal division has resulted in inaction. It does not take a pessimist to suggest that perhaps present opportunities are not significantly different from

past ones. What this means is that if practical education responds now as it has in the past, it will not be long before these opportunities evaoprate.

Whatever the purpose of history is, it is not to criticize actions in the past. Educational trends cannot be seen clearly except with the benefit of many years of hindsight. With any luck, though, that clarity of vision may inform action in the present and future.

References

Allen, H. P. (1950). *The federal government and education: the original and complete study of education for the Hoover Commission Task Force on Public Welfare.* New York: McGraw-Hill.

Anderson, L. (1926). *A history of manual and industrial school education.* New York: Appleton.

Babcock, R. J. (1967). The problem... *The Journal of Industrial Arts Education, 26*(4), 32-34.

Barella, R. & Wright, R. (Eds). (1981). *An interpretive history of industrial arts.* Bloomington, IL: McKnight.

Barlow, M. (1967). *History of industrial education in the United States.* Peoria: Charles A. Bennett.

Barlow, M. L. (1973). Historical antecedents to career educaton. In J. H. Magisos (Ed.), *Career education: The third yearbook of the American Vocational Association.* (p. 30-39). Washington: American Vocational Association.

Bawden, W. (1950). *Leaders in industrial education.* Milwaukee: Bruce.

Bell, C. A. (1964). *A comparison of the American Industrial Arts Association and the Industrial Arts Division of the American Vocational Association with opinions concerning certain issues in industrial arts.* [Unpublished Doctoral Dissertation.] Columbia, MO: University of Missouri–Columbia.

Bennett, C. A. (1907). The manual arts: to what extent shall they be influenced by the recent movement toward industrial education *Manual Training Magazine, 8* (4), 189-195.

Bennett, C. A. (1923). *Summary of the discussion.* Industrial Education Circular No. 12. Washington DC: U.S. Bureau of Education.

Bloom, A. (1987). *The closing of the American mind.* New York: Simon & Schususter.

Bonser, F. G. & Mossman, L. C. (1923). *Industrial arts for elementary schools.* New York: MacMillan.

Boyd, G. (1966). recruit we must. *The Journal of Industrial Arts Education, 25*(5), 12-13.

Boyer, E. (1983). *High school: A report on secondary education in America.* New York, NY: Harper & Row.

Brameld, T. (1950). *Patterns of educational philosophy: A democratic interpretation.* Yonkers-on-Hudson, NY; World Book Company.

Brown, K. W. (1977). *Model of a theoretical base for industrial arts education.* Washington: American Industrial Arts Association.

Button, H. W. & Provenzo, E. F. (1989). *History of education and culture in America.* Englewood Cliffs, NJ: Prentice Hall.

Butts, R. F. (1955). *A cultural history of Western educaton.* New York: McGraw-Hill.

Coates, C. P. (1923). *History of the Manual Training School of Washington University.* Dept. of the Interior, Bureau of Education Bulletin, 1923, No. 3. Washington, DC: U.S. Government Printing Office.

Cremin, L. (1961). *The transformation of the schools.* New York: Alfred A. Knopf.

Decker, H. S. (1966). And to those who helped.... *The Journal of Industrial Arts Education, 26*(2), 22.

Decker, H. S. (1967). ...A solution. *The Journal of Industrial Arts Education, 26*(4), 35.

Dudley, U. (1994). Why history? *Math Horizons* (November, 1994), 10-11.

Educational Policies Commission. (1938). *The structure and administration of education in American democracy.* Washington: National Education Association and American Association of School Administrators.

Gerbacht, C. & Babcock, R. (1969). *Elementary school industrial arts.* New York: Bruce.

Good, J. E. (1967). Get up and live. *The Journal of Industrial Arts Education, 26*(1), 9-10.

Goodlad, J. I. (1979). *What schools are for.* Bloomington, IN: The Phi Delta Kappa Educational Foundation.

Griffith, I. (1916). *Technical manual arts for general educational purposes.* Peoria: Manual Arts Press.

Hickerson, N. (1966). *Education for alienation.* englewood Cliffs, NJ: Prentice-Hall.

Hirsch, E. D. (1987). *Cultural literacy.* Boston: Houghton-Mifflin.

Householder, D. L. (1992). Redesign of technology teacher education: model programs for the future. In International Technology Education Association: *Camelback Symposium: critical issues in technology education* (p. 4-9). Reston. VA: International Technology Education Association.

Householder, D. L. (1993). Technology teacher education: status and prospect. *Journal of Technology Studies, 24*(1), 14-19.

Hutton, D. (1992). To nology or not to nology? *Tech Directions, 52*(1), 37-38.

Industrial arts for grades K-6 in New Jersey program. (1966). *The Journal of Industrial Arts Education, 25*(3), 8

Lewis, T. (1994). Limits on change to technology education curriculum. *Journal of Industrial Teacher Education 31*(2), 8-27.

Magisos, J. H. (Ed.). (1973). *Career education: The third yearbook of the American Vocational Association.* Washington: American Vocational Association.

Maley, D. (1959). Research and experimentation in the junior high school. *The Industrial Arts Teacher, 18*(4), 12-16.

Marland, S. P. (n.d.). *Career education now.* Springfield, IL: Division of Vocational and Technical Education, Board of Vocational Education and Rehabilitation.

McPherson, W. (1978). Humanism in American education: An overview. In L. Anderson (Ed.) *Industrial arts in the open access curriculum.* Bloomington, IL: McKnight & McKinght.

Miller, R. & Smalley, L. (1963). *Selected readings in industrial arts.* Bloomington: McKnight & McKnight.

Nee, J. (1993). Unity through diversity. *Tech Directions, 52*(8), 47-49.

Paton, A. (1958). Upgrading science training for industrial arts teachers. *The Industrial Arts Teacher, 18*(1), 17.

Petrina, S. & Volk, K. (1995). Industrial arts movement's history, vision, and ideal: Relevant, contemporary, used but unrecognized—Part I. *Journal of Technological Studies, 21*(1), 24-32.

Petrina, S. & Volk, K. (In press). Industrial arts movement's history, vision, and ideal: Relevant, contemporary, used but unrecognized—Part II. *Journal of Technological Studies.*

Powell, S. D. (1966). A boat needs two oars. *The Journal of Industrial Arts Education, 25*(4), 63.

Prosser, C. A. (1930). *Evening industrial schools.* Chicago: American Technical Society.

Schmitt, M. L. (1967). Present. *The Journal of Industrial Arts Education, 26*(3), 52-54.

Scobey, M. M. (1966). Introducing children to industrial processes. *The Journal of Industrial Arts Education, 25*(4), 24-29.

Smith, D. (1981). Industrial arts founded. In R. Barella & R. Wright, (Eds.) *An interpretive history of industrial arts.* Bloomington, IL: McKnight.

Smith, D. F. (1982). Industrial arts and its contribution to career education. In D. Maley & K. N. Starkweather, (Eds.). *The contributions of industrial arts to selected areas of education.* (pp. 113-129). Bloomington, IL: McKnight Publishing.

Snyder, M. (1992). *The transition from industrial arts to technology education in the United States: A historical perspective.* [Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University].

Spencer, T. (1959). Mass production in industrial arts. *Industrial Arts and Vocational Education, 48*(8), 229230.

Towers, E., Lux, D. & Ray, W. E. (1966). *A rationale and structure for industrial arts subject matter.* Columbus: The Ohio State University.

Van Doren, M. (1943). *Liberal education.* New York: Henry Holt and Company.

Volk, K. (1993). Enrollment trends in industrial arts/technology education teacher education from 1970-1990. *Journal of Technology Education, 4*(2), 46-59.

Volk, K. (1993). The lineage of research and teaching. *The Technology Teacher, 53*(3), 27-28.

Volk, K. (1995). *The politics of technology education: Right to the end.* Paper presented at the 1995 International Technology Education Association Conference, Nashville, TN.

Waetjen, W. (1992). Shaping the future of a profession. In International Technology Education Association: *Camelback Symposium: critical issues in technology education* (p. 25-30). Reston. VA: International Technology Education Association.

Wicklein, R. C. (1993). Identifying critical issues and problems in technology education using a modified-delphi technique. *Journal of Technology Education, 5*(1), 54-71.

Woodring, P. (1983). *The persistent problems of education.* Bloomington, IN: The Phi Delta Kappa Educational Foundation.

Wright, R. T. (1981). Manual training: Constructive activities enter the public schools. In R. Barella & R. T. Wright (Eds.), *An interpretive history of industrial arts: The interrelationship of society, education, and industrial*

arts. Thirtieth Yearbook of the American Council on Industrial Arts Teacher Education. (pp. 87-129). Bloomington, IL: McKnight.

Zuga, K. F. (1980). The St. Louis Manual Training School-A future oriented school. *Industrial arts: The spirit of progress. Addresses and proceedings of the 42nd National and 9th International Annual Conference of the American Industrial Arts Association, St. Louis Missouri, March 24-28, 1980*, (pp. 94-95). Washington DC: The American Industrial Arts Association.

Zuga, K. F. (1994). Whose authenticity? *Journal of Industrial Teacher Education, 31*(3), 79-84.